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March 12, 2000



Box Patent Application  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

Transmitted herewith for filing is a patent application as follows:

Inventors: Zvi Or-Bach and Dan Kikinis  
Title: System and Method for Consolidated Shipping and Receiving  
Using Reusable Containers  
Docket: Or-Bach2

Also enclosed are:

- 2 sheets of informal drawings
- 3 pages of Declaration (unsigned)
- 1 return receipt postcard
- 1 check for \$462.00
- 1 Information Disclosure Statement including 4 references

CLAIMS AS FILED

	<u>Claims</u>	<u>Extra</u> <u>Claims</u>	<u>Rate</u>	<u>Additional</u> <u>Fee</u>
Total Claims	18	0	\$9	\$0
Independent Claims	6	3	\$39	\$117
Basic Fee				\$345
Total:				\$462

A check for \$462.00 is enclosed herewith.

Please note that this application is entitled to small entity status. A small entity declaration will be filed in due course.

This transmittal letter is being filed in triplicate.

Respectfully Submitted,

Kenneth E. Leeds  
Reg. No. 30,566  
Attorney for Applicants

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SYSTEM AND METHOD FOR CONSOLIDATED SHIPPING AND  
RECEIVING USING REUSABLE CONTAINERS

Zvi Or-Bach  
Dan Kikinis

Background of the Invention

This invention pertains to a system and method for shipping products in commerce. This invention also pertains to a system and method for tracking shipping containers and the returning of shipping containers.

With the arrival of the internet, many existing businesses have changed the way they do business. The driving force behind this change is E-commerce ("EC"), short for electronic commerce, as trading on the internet is known. There are several types of E-commerce, e.g. business to business (B2B), business to consumer (B2C) and consumer to consumer. The most notable form of consumer to consumer E-commerce is in the form of auctions.

One problem in E-commerce is shipping. Some E-commerce companies ship directly from a warehouse to the recipient, e.g. using one of the currently existing parcel services. Although not very expensive, for small items the shipping costs can be substantial. However, the costs of shipping can be partially offset by the avoidance of local sales taxes when the purchaser and vendor are from different states.

There are several problems other than shipping. For example, returning purchased items can be inconvenient. Even receiving the purchased items can be inconvenient e.g., if no one is home during office hours, when most deliveries occur.

1 In order to accommodate purchasers, some grocery deliverers offer to have a  
2 buyer deposit a key with the deliverer. The deliverer's employees can then enter the  
3 buyer's home unattended. This creates several problems. For example, disputes can  
4 arise, since no one signs for goods that are delivered.

5 Another problem is that the privacy and security of the homeowner are  
6 compromised. Further, since the drivers must also have all relevant alarm codes, they  
7 may become prime targets for robberies, not so much for the goods on the truck, but for  
8 the keys and alarm codes that they carry.

9 Another problem is when unsupervised children are at home. When drivers are  
10 hired, normally the background checks on those drivers are not very extensive. This  
11 creates risks for the unsupervised children, and their possible exposure to undesirable  
12 elements.

13 Our U.S. Patent Application Serial No. 09/481,783, filed January 11, 2000,  
14 teaches a system and method for low cost delivery of goods, without intruding into the  
15 sanctity of the home. This system and method permits signing for delivery and  
16 facilitating easy and inexpensive return of unwanted merchandise, in a manner that is  
17 easy for the purchaser and efficient for the business. (The '783 application is  
18 incorporated herein by reference.)

19 It would be desirable to reduce the cost and improve service quality of a system  
20 and method for delivery of goods by allowing better tracking of shipments. It would also  
21 be desirable to reduce cost and waste associated with such a system and method. In  
22 particular, it would be desirable to reduce the waste and cost associated with the  
23 containers used to ship and/or deliver goods.

1

2 Summary

3 A method in accordance with the invention comprises the steps of providing  
4 goods to purchasers in reusable containers. When the purchaser returns the reusable  
5 containers, a deposit can be credited to the purchaser's account.

6 In accordance with one novel feature of the invention, tracking apparatus such as  
7 an RFID ("Radio Frequency Identification) is attached to the reusable container. (As  
8 explained below, RFIDs are well known, and comprise a small radio transmission device.  
9 The RFID can be electronically queried, and in response to such querying, provide a data  
10 signal identifying the particular RFID.)

11 In one embodiment, prior to delivering goods to the purchaser in the reusable  
12 container, the vendor makes an entry in a memory device (e.g. a RAM, memory disk,  
13 memory tape, or other device) identifying the reusable container and the purchaser to  
14 whom the container is being delivered. When the purchaser returns the container to the  
15 vendor, the return of the container can be electronically tracked. Specifically, the RFID  
16 attached to the returned container is again electronically queried, and the information  
17 provided by the RFID can be entered into the above-mentioned memory device, thereby  
18 indicating that the reusable container has been returned. The deposit can thus be credited  
19 to the purchaser's account automatically. This reduces the expense of tracking the return  
20 of reusable containers. This facilitates the use of reusable containers, which would be  
21 prohibitively expensive for shipping goods if they were not returned to the shipper or  
22 vendor.

1 In one embodiment, the goods are shipped to customers in accordance with the  
2 method taught in the '783 application.

3 Also, in one embodiment, the RFID can be used to track the goods in the  
4 container as they are shipped through the distribution network to the customer.

#### 5 6 Brief Description of the Drawing

7 Fig. 1 is a block diagram illustrating a system for ordering goods and providing  
8 those goods to a purchaser through consolidated shipping in accordance with our '783  
9 application.

10 Fig. 2 illustrates an example of a reusable shipping container with an integrated  
11 RFID for facilitating tracking

12 Fig. 3 illustrates a reusable pallet for carrying or holding reusable containers.

#### 13 14 Detailed Description

15 In this patent we will first describe the system taught in our '783 application. As  
16 mentioned above, this system provides purchased goods to customers in an efficient  
17 manner. We will then describe an improvement whereby goods are packaged in  
18 containers using RFID tracking apparatus.

19 In a system in accordance with the '783 application, a purchaser places an order  
20 online from his or her net appliance (typically a personal computer 100), either at work or  
21 at home. Computer 100 is connected via an internet service provider (ISP) 102 to  
22 internet 101. The purchaser accesses internet 101 via computer 100 to order goods from  
23 a plurality of vendors. The vendors can be any of numerous types of vendors, e.g.

1 vendors of groceries, electronic goods, hardware items, office supplies, appliances,  
2 furniture, gardening goods, clothing, perfume, etc.

3 In order to order these goods, the purchaser has several options. For example, the  
4 purchaser can connect to a portal 120 via a connection 110. In one embodiment, portal  
5 120 is a server. Connection 110 is invoked by accessing the URL (universal resource  
6 locator) of portal 120 in the same way that internet web pages are typically accessed.  
7 Portal 120 offers connections 122a to 122d to associated vendors, symbolized by boxes  
8 130a to 130d, each having a server coupled for receiving orders from portal 120. Each  
9 vendor is typically an independent company. The purchaser communicates via portal  
10 120 with vendors 130 to order goods from each vendor. The purchaser also typically  
11 instructs the vendors when the goods are to be picked up and the location from which the  
12 goods are to be picked up. As explained below, the purchaser has a choice of several  
13 central locations SML1 to SML3 from which he or she can pick up the goods. (The  
14 servers of vendors 130 may provide availability information so that the purchaser can  
15 have an idea as to the earliest possible time for pick-up.) The purchaser can either pay  
16 for the goods at this point in the transaction using a credit card, or at the location and time  
17 of pick-up.

18 A purchaser also has the option of communicating with vendors 130a to 130d  
19 without going through portal 120, e.g. by accessing the servers of vendors 130a to 130d  
20 directly through the internet. This is symbolically illustrated by connections 121a to  
21 121d for connecting ISP 102 directly to one or more of vendors 130a to 130d. In one  
22 embodiment, vendors 130a to 130d have their own internet web site, and are contacted  
23 via their URLs. A purchaser can use a bookmark in his or her browser, or contact

vendors 130 using other types of application software running on internet appliance (e.g. PC) 100. Again, in this embodiment, the purchaser indicates when the goods are to be picked up, and where they are to be picked up from.

Optionally, the goods of each vendor 130 can have their own separate brand that identifies the point of origin of those goods separate and apart from the manner of distribution. Alternatively, a brand or trademark can be associated with the goods that indicate its origin in terms of the company providing the distribution mechanism. This brand can be applied to the various goods purchased using the method of the '783 application, even though the goods may have been manufactured or supplied by different vendors 130. Alternatively, the brand applied to the goods may reflect both the vendor 130 and the company providing the distribution mechanism.

Vendors 130a to 130d are examples of numerous vendors. However, there can be numerous vendors, a small number of vendors or only one vendor. The vendors can use common portal 120 or separate web sites.

Some of the links shown in Fig. 1 (e.g. links 110 and 121) are internet links. These links are not typically permanent, but rather, are established on a temporary basis, as is typical in use of the internet.

In the embodiment of Fig. 1, the servers of vendors 130a to 130c are electronically linked via connections 131a to 131c to their warehouses 140a to 140c. (Optionally, these servers may be physically located within warehouses 140.) These links permit vendors 130a to 130c to instruct their warehouses 140a to 140c to ship ordered goods to a regional warehouse 150 via shipping lines 141a to 141c. After consolidating the goods into a single order at warehouse 150, the consolidated order is

1 forwarded to a selected one of exemplary supermarkets SML1 to SML3 for pickup. (The  
2 specific supermarket SML is typically selected by the user at the time of ordering.)  
3 Alternatively, vendors 130a to 130c can bypass warehouse 150 and ship ordered goods  
4 directly to one of exemplary supermarkets SML1 to SML3 for consolidation and pick-up.  
5 (In the embodiment of Fig. 1, establishments SML1 to SML3 are supermarkets.  
6 However, establishments SML1 to SML3 can be any kind of retail establishment.)

7 Vendor 130d uses a different technique, in that it has a warehouse 140d merged  
8 into regional warehouse 150. In some embodiments, there is only one regional  
9 warehouse. In other embodiments, there are many regional warehouses across the  
10 country. Each regional warehouse 150 consolidates orders for purchasers in a particular  
11 geographic area.

12 In some embodiments, supermarkets SML may use the same approach to allow a  
13 user to pre-order groceries (e.g. via the internet), and have them bagged and ready for  
14 pickup at the same time as the goods from warehouses 140. This is facilitated by also  
15 informing supermarkets SML as to what groceries are being pre-ordered, and when the  
16 purchaser will pick up these groceries. This information is provided by internet appliance  
17 100 to supermarkets SML via internet links 121 or 110, and electronic links 135 at the  
18 time the groceries are being pre-ordered. (Links 135 are provided between vendors 130  
19 and supermarkets SML. Only a few of links 135 are shown in Fig. 1. One or more  
20 computer terminals or PCs including one or more data output devices are provided at  
21 supermarkets SML so that personnel at supermarkets SML are made aware of the pre-  
22 ordering of groceries.) Vendors 130 also inform supermarkets SML, via links 135, when  
23 the goods from vendors 130 are to be delivered. Along with this information, handling



1 instructions may also be sent, e.g. to open and show the purchaser a certain product and  
2 let him sign a receipt reflecting inspection of the actual product and its function, rather  
3 than merely signing a receipt reflecting receipt of just a box.

4 After the goods are ordered from vendors 130, consolidated and provided to one  
5 of supermarkets SML, and/or groceries are ordered from one of supermarkets SML, the  
6 purchaser can then come to that supermarket SML, at the mutually agreed time, and pick  
7 up both pre-ordered groceries and the goods freshly delivered by vendors 130. The  
8 purchaser may also quickly browse the supermarket first, for the few items he forgot to  
9 pre-order.

10 In one embodiment, the purchaser may use his credit card, store card or other type  
11 of magnetic or electronic card when first stepping into the cash register line. This can be  
12 accomplished by passing the card through an electronic card reader to inform appropriate  
13 inventory order processing/control automation or personnel of the purchaser's arrival.  
14 Thus, by the time the purchaser gets to the register, a bag handler can bring the purchased  
15 goods to the register for pickup, ready in a cart, with printed instructions, or instructions  
16 on the display of the cash register. An example of a typical printed instruction is an  
17 instruction concerning the filling out of a warranty card, instructions concerning use of  
18 the product, or an instruction concerning obtaining a cash rebate from a manufacturer.

19 An additional option is to allow the purchaser to scan his credit card or a store  
20 club card at the entrance of supermarket SML, thereby permitting the supermarket to  
21 respond by pulling the ordered merchandise to have the merchandise ready at the  
22 checkout counter.

When returning an item, the purchaser brings in a receipt and the item to the supermarket SML, and gets credit after the clerk checks return instructions with the vendor. This can be done using one of computer links 135 between supermarket SML and vendors 130. Of importance, a method in accordance with one embodiment of the '783 method permits a user to return goods from any of numerous vendors 130 to one location (e.g. one of supermarkets SML), thereby saving the purchaser from the inconvenience of having to make numerous trips to numerous locations.

This method allows so called brick and mortar stores to stay competitive with e-commerce vendors by adopting certain aspects of E-commerce and becoming a one stop service center for purchasers, e.g. open 7 days a week, 24 hours per day. While the above-described method is typically used by supermarkets SML, in other embodiments, it is used by drug stores, convenience stores, or other types of sales establishments. These other types of sales establishments can serve as distribution hubs for many different kinds of goods from the various vendors 130. In lieu of a retail establishment, a warehouse such as warehouse 150 can serve as the pick-up point.

To enhance operation of the system, once orders are accepted, they are immediately transferred from the vendor 130 accepting the order to its warehouse 140, as well as the downstream supermarket SML handling the transaction. The warehouse computer system (designated as 150a in Fig. 1) and/or the supermarket computer system can also manage logistics, such as transportation in a manner known in the art. There are numerous ways to inter-network multiple servers using WANs (e.g. the internet) so that any computer or server or cluster of servers can be used to embed any function. In some cases so called proxy servers may be used to interface parts of the system. In other cases,

proxy servers, or parts of the service can be outsourced to so-called Application Service Providers (ASPs). In other cases, special protocols, such as XML (extensible markup language) or DHTML (dynamic hypertext markup language) etc. or alternatively “drivers”, “pipes”, “adapters” etc. can be used. By using any or any combinations of the above listed or similar software elements in any physical combination of servers or equivalents, an essentially equivalent system can be built. Both the physical and logical topology of the system are very flexible, although it is desirable to have the logical topology approximate the physical flow for merchandise to reduce the risk of miscommunication.

In lieu of using a network such as internet 101, in another embodiment, the user contacts the store SML and/or vendors 130 by telephone, e.g. using a toll free number such as an 800 number, and using an automatic number identification (ANI) Caller-ID system to identify the purchaser. A server then notifies the store and instructs the store via telephone to ready the merchandise so that by the time the purchaser reaches the store, the merchandise is placed in suitable containers (e.g. bags) for the purchaser to pick up. Systems that can receive a phone call and actuate computer programs are well known in the art, and are sometimes referred to as Interactive Voice Response (IVR), or Voice Response Units (VRU).

Optionally, a local courier service or an existing delivery service of the local store can be used to make a local, consolidated delivery from one of supermarkets SML (or central warehouse 150) to the purchaser.

1           The various options for providing goods to purchasers (e.g. pick-up at  
2   supermarkets SML or consolidated delivery) are indicated by arrow bundles 160a to  
3   160c, symbolizing the flow of goods out of supermarkets SML.

4           In another aspect of the '783 method, supermarkets SML can provide bonuses, or  
5   enhanced bonuses for pre-ordered items such as staples like milk, bread, flour, etc., since  
6   it permits the store to run a tighter inventory, but still meet all the demand. (Such  
7   bonuses can be in the form of cash discounts or bonus point programs, wherein the points  
8   can be traded in for various products.)

9           The '783 application further describes an enhanced method in which pickup is  
10   arranged using a specially designated area within market SML containing numbered  
11   boxes or lockers. When a purchaser arrives at a given time, he or she can pick up his or  
12   her merchandise simply by going to an assigned locker and entering a onetime password  
13   on a control panel associated with the locker. This unlocks the locker and permits the  
14   purchaser to pick up the goods and exit the store without further delay. Lockers are not  
15   typically permanently assigned, but rather, are assigned when the pickup time is  
16   established. The password can be selected by the vendor or market SML and  
17   communicated to the purchaser at the time he or she orders the goods. Alternatively, the  
18   purchaser can select the password at the time he or she orders the goods. In yet another  
19   embodiment, the purchaser may have a pre-assigned password that is unique to that  
20   purchaser, and used for all the purchaser's transactions.

21           Alternatively, instead of a password, the purchaser scans his store card or credit  
22   card with an electronic card scanner/reader located on the locker. (This use of the credit  
23   card can also be the means by which the purchased goods are paid for.) This unlocks the

locker and permits the purchaser to exit the store without further delay. (The control panel or scanner is typically in electronic communication with a computer system within supermarket SML that receives order information via one of links 135. Thus, the distribution system can control which credit card or pass combination the locker responds to. The distribution system also monitors when pick-up has occurred.)

Optionally, at the request of the customer, or by default, the customer may be alerted by an alerting system to the availability of his or her goods. That alerting system may be for example a voice call (automated from one of the servers such as a server at the pickup location or elsewhere and a connected voice response unit), e-mail from a server with or without a human caller, e-mail in conjunction with a page from an electronic pager, a message provided on a cell phone, or other alerting method or system. In some embodiments a message board in the pick up location (e.g. store) may flash an order number to indicate availability.

The invention described in our '783 application can be practiced using stores or other commercial establishments other than supermarkets. For example, any type of chain (e.g. regional, local, national or global) that has supply chain management can use a method in accordance with the invention, e.g. drug stores, convenience stores, mail outlets such as the U.S. Postal Service, Mail Boxes etc.<sup>TM</sup>, gas stations, warehouse stores, banks or other chains or franchise outlets that have substantial traffic. In some embodiments, no prior arrangement with the store is required, to have products delivered there. Also, the purchaser does not have to have a special preexisting contractual arrangement with the store to receive goods there, other than the specific order that he or

she placed via the internet. In this embodiment, the purchaser may or may not incur expense, other than the specific order, to receive goods at the store.

Depending on the type of supply chain management implemented, local or regional centers may not necessarily be owned or operated by a retail chain, but rather by a third party, such as a wholesaler or a large vendor, selling key items such as bread, soft drinks, etc. which require daily deliveries.

Modules for internet-to-supply chain management (SCM) software can be provided that follow preset rules, and invoke auxiliary services, such as instruction printing at the outset of ordering merchandise, warranties, the setup of a software installation (when required), etc. Such software can be partitioned and implemented in many ways, and can be hosted on any of one or several servers, including the servers shown in Fig. 1. The novel approach is to link two or more vendors via the portal function, where the buyer communicates to the vendors what product is being purchased, and how/when it will be delivered or picked up. For simplicity, the pickup/delivery facility within the store (e.g. pick-up boxes) is not shown here in Fig. 1. As described above, more than two vendors can be included in one transaction, which creates synergistic sales and has a single delivery system.

The above-described system can be further improved, and both cost and service aspects can be improved, by introducing an RFID (Radio Frequency IDentification) tag in a re-useable container. RFID tags are well known. They are small apparatus that can be affixed to a container and queried via radio waves. When queried, they provide identification information. RFID tags are described, for example, by Amanda Loudin, “RFID Comes Into Its Own”, published by Warehousing Management

1 (<http://www.warehousing.com/FEATURES/WM0499F2.HTM>), “FASTRAK and  
2 OTHER RFID Systems” (<http://cwc.ucsd.edu/-chapelle/RFID/rfid.html>), “New 13.56 MHz Tag  
3 Opens RFID to New Applications Tag Provides High Performance at Low Cost”  
4 (<http://www.businesswire.com/webbox/bw.020199/983835.htm>), and Eric Sells, “New  
5 RFID Tag Chip Features Advanced Anti-Collision with Simultaneous Interrogation of 10  
6 Tags” (<http://www.microchip.com/0/Company/Edit/pRelease/PR78/index.htm>). These  
7 documents are being submitted in an information disclosure statement filed herewith and  
8 incorporated herein by reference.

9       RFIDs are seldom used in consumer applications, because at about 0.5 to 2 dollars  
10 per unit they would become a substantial cost element, especially when a typical shipping  
11 cost is about 1 to 3 dollars for small parcels for mass shippers.

12       Cardboard boxes typically used for shipping, and the labor required to prepare the  
13 boxes for shipping, impact the cost of shipping, as it can take a couple of minutes to  
14 prepare a box. The box itself can cost 0.5 to 2 dollars.

15       By using reusable containers that have an RFID built in, those costs can be  
16 reduced. Similar to a bottle redemption value, a 2 to 10 dollar charge (depending on  
17 market acceptance and actual cost of container with a RFID) can be levied if the  
18 purchaser does not return the container within a certain time period in useable state (e.g.  
19 not dirty or damaged) to one of the outlets (e.g. supermarkets SML). That free time  
20 period is provided to allow the purchaser to use the original shipping box to return a  
21 purchased item, thus preserving the item’s appearance and preventing it from being  
22 damaged during the process of returning it.

Inside the reusable container, air inflatable bags, bubble wrap, Styrofoam "peanuts," or other structures can be used to stabilize and protect the contents. They can be returned with the container, further reducing waste and cost. Fig 2 illustrates an example of such a reusable container or box 201. Referring to Fig. 2, box 201 comprises a cover 202a attached to a bottom unit 202b by 2 hinges 203a, 203b. Cover 202a also has two latches 204a, 204b, which lock into slots 211a, 211b, respectively, in bottom unit 202b. Holes 212 and 213 in bottom unit 202b and cover 202a line up to allow sealing box 201, for example with a plastic tie or seal.

A compartment 214 within box 201 contains the RFID 216 (shown in phantom). RFID 216 is distance and multi-readable in the preferred embodiment. By distance readable, we mean that RFID 216 can be read by reading apparatus from a distance (typically up to several feet). By multi-readable, we mean that several RFIDs can be read simultaneously or substantially simultaneously. This allows a whole pallet to be scanned at once, for example as it is loaded off or onto a truck. Such scanning can be done at any point along the shipping route or distribution chain, allowing for better tracking at low cost.

Box 201 is designed such that multiple boxes can be securely stacked on one another. For example, in Fig. 2, a foot 220 extends downward from the bottom of box 201. Foot 220 fits into and mates with a cavity in the cover of a box upon which box 201 is stacked. Similarly, box 201 includes a cavity in its top surface to receive the foot 220 of a box placed on top of box 201. (This cavity is not shown in Fig. 2, as it would be on the far side of cover 202a in Fig. 2.)



1 In one embodiment, the distribution chain can also use boxes that are half the size  
2 of box 201. Thus, two half-boxes can be placed together on top of (or below) full size  
3 box 201. Similarly, two quarter size boxes can fit on top of (or below) a half size box,  
4 and so forth.

5 Fig 3 shows a re-usable pallet 300, which comprises cavities 301a-d for receiving  
6 e.g. full size boxes. The pallet may also contain an RFID 302 for better inventory  
7 tracking. In other words, RFID can be used to track the location of pallet 302.

8 In one embodiment, there may also be 2 or 3 different heights of boxes in  
9 accordance with the invention. For example, there can be standard boxes of a given  
10 height, boxes of half that standard height, and boxes of a quarter of that standard height.  
11 Thus, when stacking goods on pallet 300, 2 half height boxes or four quarter height boxes  
12 can be stacked adjacent a full height box, allowing the vendor to mix and match many  
13 box sizes in a convenient manner on one pallet. If boxes are stacked on a pallet such that  
14 the total height of the boxes exceeds a certain height, the pallets may be shrink-wrapped  
15 to further stabilize them. Since the RFID allows scanning of all units on a pallet without  
16 physically reaching it, even RFIDs affixed to boxes buried within the pallet load can be  
17 scanned and inventoried.

18 The goods for a given purchaser are typically loaded into box 201 at warehouse  
19 150 (although they could also be loaded into box 201 at warehouses 140 or supermarket  
20 SML). At this time, a scanner 250 (Fig. 2) is used to read identification information from  
21 RFID 216, and that identification information is entered into a memory device 150b,  
22 along with information corresponding to the purchaser who is to receive the box.  
23 Memory device 150b can be a memory disk, memory tape, a semiconductor memory, or

1 some other type of memory device. Fig. 1 shows that memory device 150b is located at  
2 warehouse 150 and Fig. 2 shows that scanner 250 is linked to memory device 150b via  
3 computer 150a. However, the physical location of memory 150b is not critical to the  
4 present invention. Memory device 150b and computer 150a could be located anywhere,  
5 but memory device 150b is preferably electronically linked to the location where goods  
6 are being placed in box 201. Also, preferably, different computer systems and servers  
7 throughout the distribution channel have access to memory device 150b so that the  
8 location of box 201 can be tracked from numerous points in the distribution channel.

9 Scanner 250 can be a hand-held scanner coupled to computer 150a either with a  
10 wire, or without a wire (e.g. using an IR or radio wave communication link). However,  
11 whether memory device 150b is linked to scanner 250 via computer 150a or through  
12 some other means is not critical.

13 The RFID within box 201 can be scanned by scanners similar to scanner 250  
14 when box 201 leaves warehouse 150 (or 140) and when box 201 arrives at supermarkets  
15 SML, as well as at various points along the way. (Optionally, such scanners can be  
16 linked to memory 150b.) When this occurs, information in memory 150b can be updated  
17 so that the progress of the order can be tracked. Memory device 150b is also updated  
18 when box 201 is provided to the purchaser and when the purchaser returns box 201.

19 Box 201 is typically returned by the purchaser at a central collection point such as  
20 one of supermarkets SML. The RFID in box 201 is scanned by a scanner similar to  
21 scanner 250 (also preferably linked either directly or indirectly to memory 150b) at the  
22 collection point, and memory 150b is updated. Memory 150b can be coupled to or  
23 accessed by a computer that automatically credits the purchaser's account upon receipt of

1 the box 201 at the collection point. The computer that credits the purchaser's account can  
2 be either the same as or different from computer 150a. (In lieu of crediting the  
3 purchaser's account when box 201 is returned, the computer can bill the purchaser if box  
4 201 is not returned. within a predetermined time period such as 30 days.)

5 By introducing a redemption value to the containers, better, more sophisticated  
6 containers can be used, without incurring the otherwise prohibitive cost per shipping.

7 In another embodiment, the containers are never released to the end customer, but  
8 rather opened in his presence and merchandise is then handed to him at that point  
9 immediately. That removes the redemption burden from the customer, and it reduces the  
10 risk of chemical or other contamination or damage that might occur when the container is  
11 in the possession of certain users.

12 In yet another embodiment the container has no RFID, but uses conventional  
13 tagging methods like human readable indica or machine readable indica (or both human  
14 readable and machine readable indicia), such as bar codes, magnetic strips, etc. The use  
15 of a re-useable, resealable container in such a closed cycle system for dry goods in and of  
16 itself is considered novel by the inventors. Such use of a reusable container is further  
17 novel when delivering single orders to consumers or hand-off points as described above.

18 In another embodiment, based on the different vendors and products and/or  
19 product types shipped, the shipping consolidator can create a profile. For example, a  
20 computer such as computer 150a collects information concerning the buying habits of a  
21 particular customer. The information can include a) what type of goods the customer  
22 likes to buy; b) what kind of credit cards the customer uses; c) what types of vendors he

1 likes to buy from; etc. This can be used to target the customer for sending him  
2 advertisements.

3 In one embodiment, the customer is offered subsidized or free shipping in return  
4 for the customer's agreement that advertisements can be added to or placed in the  
5 reusable container (along with the merchandise). (Alternatively, the advertisements may  
6 be attached to the outside of the reusable container, or inserted into a portion of the  
7 container in such a way that the advertisements are nonetheless visible from the outside  
8 of the container, e.g. through windows in the container. Opt-in and opt out options can  
9 be used to allow the customer to choose whether or not to receive the advertisements.

10 The customer can receive a discount if he agrees to receive such advertising.

11 Alternatively, in other embodiments, the customer must pay an extra fee to not receive  
12 such advertisements. The advertising material is not limited to printed paper, but may  
13 also include digital media, such as CD ROMS, bar codes, URLs etc. In some  
14 embodiments, where the customer receives free shipping anyway, the proceeds of such  
15 advertising may be directed to the party paying for the shipping services.

16 In case the customers receive the containers, sniffer probes may be used on  
17 returned containers at certain points of the return path for empty containers, thus allowing  
18 the shipper to weed out such units and possibly bill the customer for it.

1           We claim:

2           1.       A method comprising:

3           providing goods in reusable containers, said reusable containers having RFID

4           apparatus attached thereto;

5           establishing a relationship between an RFID and a memory;

6           providing said goods in said containers to customers;

7           collecting said reusable containers from said customers; and

8           identifying which customers have returned their reusable containers by

9           electronically querying the RFIDs attached to the reusable containers collected from said

10          customers.

11

12          2.       Method of claim 1 wherein said establishing of said relationship comprises

13          storing in said memory a database including data associated with said RFID.

14

15          3.       Method of claim 1 wherein said establishing of said relationship comprises

16          storing in said memory an identification indicia indicative of said RFID.

17

18          4.       Method of claim 1 wherein said establishing of said relationship comprises

19          storing in said memory an identification of the customer to whom said container is

20          provided.

21

22          5.       Method of claim 1 further comprising:

1 receiving orders from customers, said orders being for goods from a plurality of  
2 vendors, said orders being communicated to each of said vendors;  
3 collecting said goods from said plurality of vendors at a central location;  
4 providing said goods in said reusable containers;  
5 informing said customers when said goods will be available for pickup; and  
6 making said goods available for pickup by said customers, wherein said goods are  
7 in said reusable containers.

8  
9 6. Method of claim 5 wherein said customers return said reusable containers  
10 to a central collection point, said method further comprising querying the RFIDs within  
11 said containers when said customers return said containers to said collection point.

12  
13 7. Method of claim 1 further comprising crediting accounts of those  
14 customers who return their reusable containers, said crediting being accomplished by a  
15 computer that receives the data scanned in from said RFIDs.

16  
17 8. A system comprising:  
18 a memory;  
19 a plurality of reusable containers, each reusable container having RFID apparatus  
20 affixed thereto; and  
21 a scanner for scanning the RFID apparatus affixed to said containers and tracking  
22 when said containers are provided to customers and when said containers are returned by  
23 said customers.

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9. System of claim 8 wherein a computerized billing system is electronically coupled to the memory so that a customer can be billed if that customer does not return the reusable container.

10. A method comprising:  
providing goods in reusable containers, said reusable containers having RFID apparatus attached thereto;  
establishing a relationship between an RFID and a memory;  
shipping said goods in said containers to a distribution point;  
providing said goods to customers;  
collecting said reusable containers; and  
identifying which containers have been collected by electronically querying the RFIDs attached to the reusable containers.

11. A system comprising:  
a memory;  
a plurality of reusable containers, each reusable container having RFID apparatus affixed thereto; and  
a scanner for scanning the RFID apparatus affixed to said containers and tracking said containers.





1           16.     Method of claim 14 further comprising collecting said containers from  
2     said customers and scanning said indicia after collecting said containers from said  
3     customers.

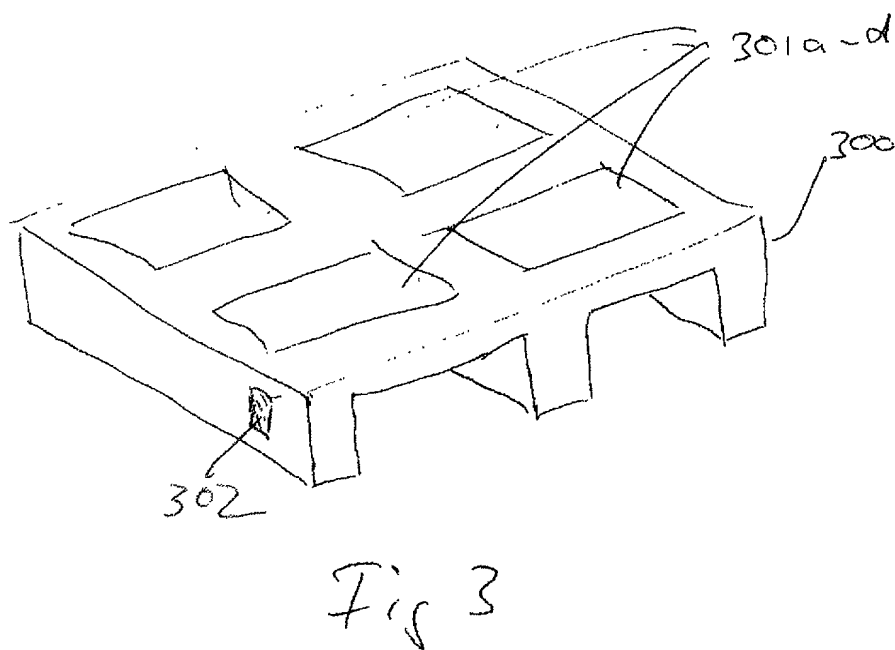
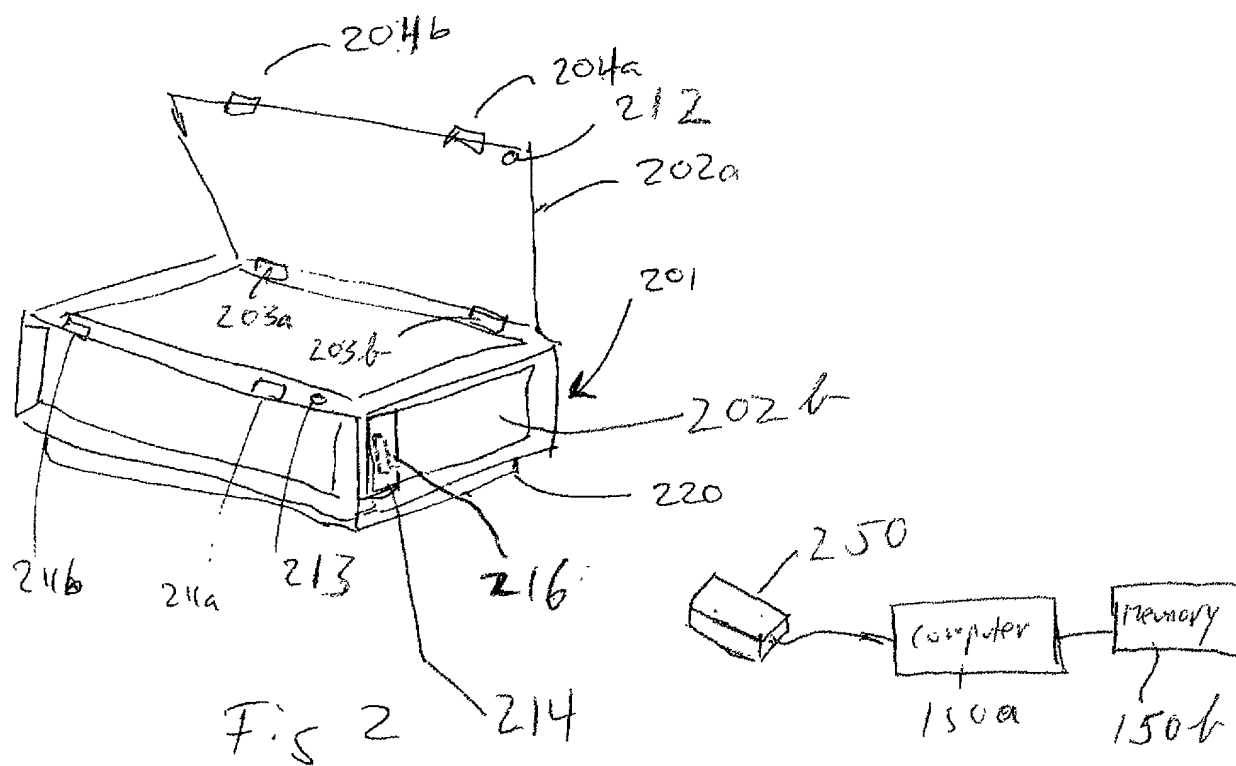
4  
5           17.     Method of claim 13 wherein said indicia are machine-readable indicia,  
6     said reading of said indicia comprising scanning said indicia electronically.

7  
8           18.     A method comprising:  
9           providing goods in reusable containers, said reusable containers having  
10          identification indicia attached thereto;  
11          establishing a relationship between that indicia and a memory;  
12          providing said goods in said containers to customers;  
13          collecting information on the purchasing habits of said customers; and  
14          offering a reduction of shipping cost in exchange for allowing targeted  
15          advertisement to be added to the reusable containers.

16  
17

[illegible][illegible]





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<b>DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)</b>  <input checked="" type="checkbox"/> Declaration Submitted with Initial Filing      OR <input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)	<b>Attorney Docket Number</b>	Or-Bach2
	<b>First Named Inventor</b>	Zvi Or-Bach
	<b>COMPLETE IF KNOWN</b>	
	<b>Application Number</b>	/
	<b>Filing Date</b>	
	<b>Group Art Unit</b>	
	<b>Examiner Name</b>	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**System and Method for Consolidated Shipping and  
Receiving Using Reusable Containers**

the specification of which (Title of the Invention)

☒ is attached hereto  
OR

☐ was filed on (MM/DD/YYYY) [ ] as United States Application Number or PCT International  
Application Number [ ] and was amended on (MM/DD/YYYY) [ ] (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

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		<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto

[Page 1 of 2]

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I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (if applicable)

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As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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Name	Registration Number	Name	Registration Number
Kenneth E. Leeds	30,566		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number or Bar Code Label

OR ☒ Correspondence address below

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:		<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle (if any))		Family Name or Surname			
Zvi		Or-Bach			
Inventor's Signature				Date	
Residence: City	San Jose	State	CA	Country	US
				Citizenship	US and Israel
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City	San Jose	State	CA	ZIP	95124
				Country	US

☒ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

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## DECLARATION

### ADDITIONAL INVENTOR(S) Supplemental Sheet Page 1 of 1

<b>Name of Additional Joint Inventor, if any:</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor				
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Post Office Address								
City		Saratoga	State	CA	ZIP	95070	Country	US
<b>Name of Additional Joint Inventor, if any:</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor				
Given Name (first and middle [if any])				Family Name or Surname				
Inventor's Signature				Date				
Residence: City			State		Country		Citizenship	
Post Office Address								
Post Office Address								
City			State		ZIP		Country	
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Given Name (first and middle [if any])				Family Name or Surname				
Inventor's Signature				Date				
Residence: City			State		Country		Citizenship	
Post Office Address								
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